

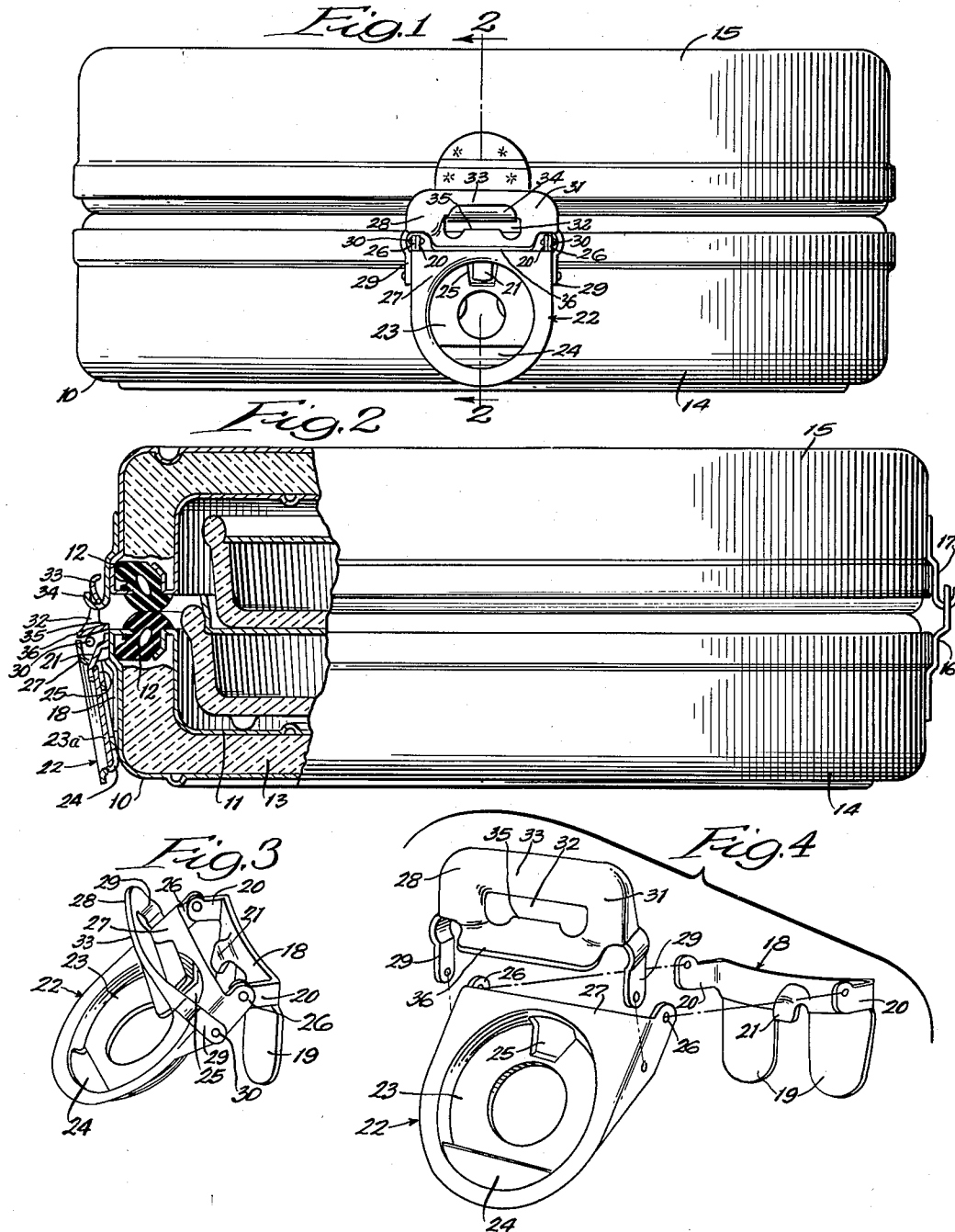
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CONTAINER TOGGLE CLAMP

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CONTAINER TOGGLE CLAMP

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6 Claims. (Cl. 292—247)

This invention relates to a container toggle clamp. The invention is particularly useful in connection with a container adapted to enclose hot or cold foods and maintain them in a tightly-sealed chamber. The clamp structure further finds unusually satisfactory application in connection with the sealing of food container sections while providing telltale means for indicating the opening of the container after it has been sealed.

In the manipulation of metal clamps employed for drawing together two sections of a container to provide a sealed chamber therein, it has been found quite easy to strain or bend the clamping device so that thereafter it fails to function effectively in preserving the desired seal. To meet this difficulty, clamps have been devised which are complicated in structure and require the connection of several parts, thus providing an expensive and complicated structure which is not foolproof in operation.

An object of the invention is to provide a toggle clamp structure in combination with container sections which prevent the straining of the clamp by misengagement between the parts while at the same time providing a structure of simplified form. Another object is to provide in a clamp structure provided with means for the forming of an indicia disc upon the opening of the clamp and a breaker device for opening the container sections, means for bringing about engagement only between the proper parts, and preventing the clamping members from engaging other parts to bring about a straining or bending of the structure. Still another object is to provide a guard structure in which a vertical draw member provides a breaker bar and a guard shelf or flange generally aligned therewith below a generally vertical hook-engaging member. Yet another object is to provide in a container clamping device an improved clamp of novel structure accomplishing new and valuable functions. Other specific objects and advantages will appear as the specification proceeds.

The invention is shown in an illustrative embodiment by the accompanying drawing, in which—

Figure 1 is a front view in elevation of a container equipped with a clamp device embodying my invention; Fig. 2, a broken detail sectional view, the section being taken as indicated at line 2—2 of Fig. 1 but with a frangible disc included; Fig. 3, a perspective view of the clamping device embodying my invention; and Fig. 4, a perspective view of the parts of the clamp and breaker jaw, the parts being shown in spaced-apart relation.

The clamping device may be used with various types of structures which may be drawn together. When employed for drawing together container parts to form a seal therebetween, the container may be of any suitable shape or construction. In the illustration given, the container consists of two insulated sections. Each section is shown provided with an outer shell 10 and an inner shell 11 and with a resilient gasket 12 connecting the two shells of each section. Insulation 13 is placed between the shells. A more detailed description of the structure is shown in my co-pending application, Serial No. 757,841,

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filed June 28, 1947, now Patent No. 2,656,946, issued October 27, 1953.

The lower container section is indicated by the numeral 14, and the upper container section is indicated by the numeral 15. At the rear of the container section 14 there is provided an upwardly-extending strap 16 having an aperture in the upper end, and section 15 is provided with a hook 17 engaging the aperture in strap 16 so as to hingedly lock the two sections together at the rear.

Secured to the front of the lower section 14 by spot-welding or other means, is a bracket 18 having depending leg portions 19 which are spotwelded or otherwise secured to the shell 10 of section 14. The bracket 18 is provided at each side with forwardly-extending pivot arms 20, and centrally the bracket 18 is provided with a forwardly and inwardly-extending breaker jaw 21.

Secured to the pivot arms 20 of bracket 18 is a clamp 22 having a central portion provided with a recess 23 adapted to receive a frangible disc 23a (shown in Fig. 2) as described more fully in my co-pending application 757,841. The forward end of the clamp 22 is provided with an opening 24 to receive the forward edge of the disc, and the rear portion of the clamping member 22 is provided with an opening 25 for receiving the breaker jaw 21. The clamp 22 is provided with spaced arms 26 which are aligned with the arms 20 of the bracket 18 and connected thereto by pivot pins. The clamp 22 has above the depressed portion 23 forming the disc-receiving recess, a web portion 27 terminating in a straight top edge.

Secured to the clamp 22 at a point outwardly of the bracket pivots is a draw arm member 28. The draw arm member has depending legs 29 connected by pivot pins 30 to the arms 26 of the clamp 22 at a point outwardly from the bracket pivots. The draw member 22 is provided with a generally vertical body portion 31 apertured at 32 so as to provide a cross bar 33. The cross bar 33 is adapted to engage a hook 34 which is secured to the upper container section 15. In the structure shown, the cross bar 33 is dished or curved, as shown more clearly in Fig. 2, so as to bring the lower edge of the bar within the saddle or center of the hook 34.

Below the aperture 32, the draw member 28 is provided with a rearwardly and slightly upwardly-extending breaker shelf 35, and the same portion of the member is extended forwardly to form a generally horizontal guard shelf 36. The platform consisting of the inwardly-extending shelf portion 35 and the outwardly-extending shelf portion 36 preferably lies in the general tilted position shown in Fig. 2 when the clamp is moved to closed position so as to provide a guard over the rear portion of the clamp 22 and also to prevent accidental disengagement between the hook 34 and the breaker member 35. Should the container parts be pressed together and the user succeed in bringing the hook 34 against the inclined bar or shelf 35 (assuming the clamp 22 and draw arm 28 are in a raised position so that such engagement might occur), the hook slides harmlessly away from the inclined bar and prevents any bending of the clamping members. At the same time, when the clamp 22 is released, that is, swung upwardly to bring about disengagement between the bar 33 and hook 34, the draw arm 28 rides upwardly along the container section 15 and the inclined shelf or bar 35 rocks upon the lower end of the hook 34 and facilitates the spreading of the container sections by exerting a force therebetween to break the vacuum but without bending any of the parts.

Operation

In the operation of the structure shown, the container parts may be initially separated and hot foods, etc., placed within the lower container section 14. The upper container 15 is then brought into the position shown in Fig. 2, with the hook 17 engaging the strap 16 at the rear of

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the container sections. The clamp 22 is then moved to bring the cross bar 33 of the cross bar arm member 28 into the saddle of the clamp 34, as shown in Fig. 2. Downward movement of the clamp 22 draws the bar 33 downwardly and the draw member 28 moves inwardly so as to bring the inclined shelf 36 into guarding position above the lower clamp 22. A paper or other frangible disc may then be inserted within the recess 23 of the clamp 22, so that one edge of the disc lies below the breaker jaw 21 and the opposite edge extends through the recess 24 in the clamp member 22. The disc is thus held securely against removal but, upon the drawing of the clamp 22 forwardly to release the clamp bar 33, the fixed breaker jaw or knife 21 cuts into the disc to deform it and thus furnish evidence of the opening of the container. As the clamp 22 swings forwardly, the draw member 28 is raised and tends to move away from the hook 34. Should the containers be held together very tightly by partial vacuum, a separation of the sections is accomplished by the rocking action of the shelf or bar 35 against the bottom of the hook 34.

The structure is rendered foolproof, and bending of the clamping members is avoided, by providing the inclined platform forming shelves 35 and 36 so that it is impossible to latch the member 35 with the hook 34, and any attempt to engage these members results in the sliding of the hook off the inclined shelf 35 and into engagement with the lower, intumed lip portion of the cross bar 33.

While in the foregoing specification I have set forth a specific structure in considerable detail for the purpose of illustrating an embodiment of the invention, it will be understood that such details of structure may be varied widely by those skilled in the art without departing from the spirit of my invention.

I claim:

1. In a toggle clamp device for drawing two members together, a hook adapted to be secured to one of the members, a bracket adapted to be secured to the other of the members and providing a fixed breaker jaw, a clamp having spaced arms pivotally connected to said bracket and having a disc-receiving recess and an aperture adapted to receive said jaw, and a draw member having spaced arms pivotally secured to said clamp arms outwardly of said bracket pivots, said draw member having a vertical body centrally apertured to provide a top cross bar curved inwardly at its bottom to engage said hook and having below said aperture a rearwardly and upwardly-inclined breaker shelf.

2. In a toggle clamp device for drawing two members together, a hook adapted to be secured to one of the members, a bracket adapted to be secured to the other of the members and providing a fixed breaker jaw, a clamp having spaced arms pivotally connected to said bracket and having a disc-receiving recess and an aperture in the recess adapted to have said jaw extend there-through, said aperture and jaw being oriented when the clamp is closed so that a frangible disc received within said recess has a portion thereof clamped under said jaw, and a draw member having spaced arms pivotally secured to said clamp arms outwardly of said bracket pivot, said draw member having a generally vertical body apertured to provide a top cross bar engageable with said hook and having below said aperture a rearwardly and upwardly-extending breaker shelf.

3. In a toggle clamp device for drawing two members together, a hook adapted to be secured to one of the members, a bracket adapted to be secured to the other of the members and providing a fixed breaker jaw, a clamp having spaced arms pivotally connected to said bracket and having a disc-receiving recess and an aperture adapted to receive said jaw, said aperture and jaw

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being aligned when the clamp is closed so that said jaw extends through the aperture, said jaw having a portion thereof extending over said recess so that an area of a disc received within said recess is positioned beneath said jaw, and a draw member having spaced arms pivotally secured to said clamp arms outwardly of said bracket pivot, said draw member having a generally vertical body apertured to provide a top cross bar engageable with said hook and having below said aperture forwardly and rearwardly-extending flanges, the rearwardly-extending flange being also inclined upwardly.

4. In a toggle clamp device for drawing together two container sections, one of the sections being provided with a hook and the other of the sections being provided with a bracket, said bracket providing a fixed breaker jaw, a clamp having spaced arms pivotally connected to said bracket and having a disc-receiving recess and an aperture adapted to receive said jaw, said aperture and jaw being aligned and the jaw extending through the aperture when the clamp is closed and the jaw having a portion extending over the recess to receive a frangible disc thereunder, and a draw member having spaced portions pivotally connected to said clamp arms outwardly of said bracket pivot, said draw member having an upwardly-extending body member centrally apertured to provide a top cross bar curved inwardly at its bottom to engage the saddle portion of said hook and having below said aperture a tilted shelf extending forwardly and rearwardly of the draw member body, said shelf being tilted rearwardly and upwardly.

5. In a toggle clamp device for drawing two container sections together, a hook secured to one of said sections, a bracket having depending leg portions secured to the other of said sections and providing a fixed breaker jaw, a clamp having spaced arms pivotally connected to said bracket and having a disc-receiving recess and an aperture in the recess adapted to receive said jaw, said aperture and jaw being aligned and the jaw extending through the aperture when the clamp is closed, said jaw being then spaced from said recess to receive a frangible disc thereunder, and a draw member having spaced arms pivotally secured to said clamp arms outwardly of said bracket pivot, said draw member being provided at its top with a dish cross bar engageable with said hook, said draw member being provided below said cross bar with a pair of aligned flanges extending in a generally horizontal plane covering the upper portion of the clamp member when the same is in closed position and extending rearwardly of the upper portion thereof.

6. In a toggle clamp device for drawing two members together, a hook adapted to be secured to one of the members, a bracket adapted to be secured to the other of the members, a clamp having spaced arms pivotally connected to said bracket, and a draw member having spaced arms pivotally secured to said clamp arms outwardly of said bracket pivot, said draw member having a generally vertical body apertured to provide a top cross bar engageable with said hook when said clamp is closed and having below said aperture a rearwardly and upwardly extending breaker shelf rockable against said hook when said clamp is swung open to impart a separating force between the two members.

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